Artisanal and small-scale mining and agriculture

Exploring their links in rural sub-Saharan Africa

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Issue paper
March 2016

Sustainable markets

Keywords:
Artisanal and small-scale mining, agriculture, livelihoods, informality, sub-Saharan Africa

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Acknowledgments

Aspects of this issues paper have been further developed and expanded upon in the review, 'Farming, small-scale mining and rural livelihoods in Sub-Saharan Africa: A critical overview', Volume 3, Issue 2 (p. 547-563) of *The Extractive Industries and Society*. The author would like to thank Bill Vorley, Emma Blackmore, Abbi Buxton, James McQuilken, Steven Van Bockstael, Boris Verbrugge and Roy Maconachie for their comments on earlier drafts of this paper.

Produced by IIED's Sustainable Markets Group

The Sustainable Markets Group drives IIED's efforts to ensure that markets contribute to positive social, environmental and economic outcomes. The group brings together IIED's work on market governance, environmental economics, small-scale and informal enterprise, and energy and extractive industries.

Published by IIED, March 2016.

Hilson, G. (2016) Artisanal and small-scale mining and agriculture: Exploring their links in rural sub-Saharan Africa. IIED, London.

Product code: 16617IIED

ISBN: 978-1-78431-329-6

Printed on recycled paper with vegetable-based inks.

Photo caption: Artisanal miners in Mali.

Photo credit: G Hilson.

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In sub-Saharan Africa, artisanal and small-scale mining (ASM) employs tens of millions of people directly. Most of the region's ASM activities are informal because registration is often costly and bureaucratic. The resulting illegality, along with the sector's numerous social ills and environmental impacts, has overshadowed its importance, in particular how many subsistence farmers now rely on ASM for their disposable incomes. This paper explores the links and symbiosis between ASM and subsistence farming in sub-Saharan Africa, and suggests ways in which to harness more effectively the former's 'livelihoods' dimension in policy.

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Executive summary

In sub-Saharan Africa, a region long scarred by poverty, artisanal and small-scale mining (ASM) is widespread. Most of this activity, however, is unregulated and informal. Yet, ASM has rapidly become one of the most important livelihood activities in sub-Saharan Africa, playing an important role in revitalising and sustaining subsistence agriculture. This issue paper explores the evidence in support of this, and examines the policy environment that has long kept ASM on the periphery of development thinking, including the misinformed view that it is populated solely by rogue entrepreneurs, and failure to appreciate its economic importance. Its aim is to stimulate a critical 'rethink' of ASM in sub-Saharan Africa.

Rural African families have long coped with risk by generating their incomes from several sources. The studies reviewed in this paper confirm that ASM is one such source, having fast become a key part of many rural economies in sub-Saharan Africa. Turbulent economic times, often exacerbated by policies introduced under 'structural adjustment', have galvanised strong links between mining and subsistence farming.

Donors and policymakers, who have long pigeonholed rural African families as 'agricultural', continue to promote a 'small farm first' agenda as the way to meet people's basic needs. Even when thinking turned to 'livelihood diversification' towards the turn of the century, ASM's economic contribution at the household level continued to be almost entirely overlooked. It was barely mentioned in most of the early landmark analyses on livelihood diversification, studies that profiled a number of countries such as Tanzania, Ghana, Burkina Faso and Sierra Leone, which today are the locations of dynamic ASM economies.

Indeed, a number of people are lured into ASM by the prospect of gaining wealth. The sector has long been viewed primarily in this light, with many decision makers seeing its social and environmental ills as stemming from 'entrepreneurs' actively evading regulations. Yet, once the pandemonium of a 'rush' ends, a mine site tends to increasingly attract individuals driven by hardship, specifically people who are in a desperate search for employment. The evidence suggests that most people who have entered ASM in sub-Saharan Africa over the past 10–15 years have done so because of this. Many work seasonally, moving between mining and agriculture throughout the year. For instance, up to 30 per cent of those engaged in ASM in the Mozambican townships of Niassa and Manica use earnings from this work to supplement their seasonal farming income. Similarly, in Liberia, many rural inhabitants use rice, grown for food production, to attract labour for mining activities.

When viewed in this light, it is easier to recognise why attempts to formalise ASM, *in the same way as large-scale mining*, are failing. The sector's perpetual informality is, in fact, largely a response to inadequate or inappropriate regulatory frameworks. Misguided and misinformed policy has contributed to the rise of the burgeoning informal ASM economy in sub-Saharan Africa today.

Those attempting to tackle ASM's social and environmental problems, therefore, must view the sector more holistically, specifically, as part of a livelihood 'complex' rather than simply an enterprising activity. This includes recognising the inseparable linkages between farming and mining, rather than giving separate treatment to each in policy. As seen in countries such as Ghana and Burkina Faso, fortified links between ASM and agriculture have provided a platform for wealth creation. Here, capital and labour routinely flow between both activities and the resulting earnings are used to finance the construction of bigger houses, send children to schools, and to pursue other business ventures.

The ASM sector is, without question, an unrivalled employment engine. This reality makes moves to eliminate it misguided. Its disconnection from the major policies and programmes aimed at facilitating rural development, however, has meant that most interventions aimed at supporting activities have tended to be standalone. Most have therefore lost traction once start-up funds have been exhausted.

This paper reviews past and recent policy interventions made for ASM at the local and regional levels in sub-Saharan Africa. Recognising that most donors are now committed to developing a more nuanced understanding of the sector both in the region and elsewhere in the developing world, it makes the following recommendations:

1. **Ministerial collaboration**. The ASM sector should not be viewed as just a *mining* issue but rather as a *rural development* issue. It is crucial to engage not just mine ministries but also those government bodies dealing with taxation, agriculture, rural development, local government and youth employment. Such ministries need to jointly analyse and develop policy around the sector's livelihoods dimension.

2. **Simplify the licensing procedure for ASM**. Evidence from across sub-Saharan Africa points to miners being frustrated with the licensing process. It must be simplified, adequately decentralised, and its unnecessary costs must be eliminated.

3. **Demarcate adequate mineralised lands to *licensed* small-scale miners**. Different countries in the region are in different phases of mining sector reform, so the appropriate strategies for making land available will vary. In all cases, however, involving national geological departments, land development agencies, and, potentially, foreign geological surveys, will be crucial.

4. **Coordinate donor activity**. Donors must adopt a more nuanced outlook on rural development, incorporating ASM to the best of their abilities. A starting point could be collaboration between donors (and their partners) who are looking separately at farming and ASM, with the aim of devising more coordinated rural development strategies and comprehensive policies.

5. **Empower local ASM associations**. Such associations exist but they are often badly-resourced, poorly staffed and limited in their reach. Often, NGOs are relied upon to partner with ASM associations but most, including those based locally, have limited knowledge of the sector. Donors should involve ASM associations from the outset, as their officials are most familiar with the dynamics of the industry.

Neglected but not negligible

Development policy has largely overlooked the importance of artisanal and small-scale mining (ASM) – low-tech, labour-intensive mineral processing and extraction. Yet, it employs millions of people directly and creates tens of millions more job opportunities in the downstream industries it spawns. Significantly, many of these individuals move into the sector out of desperation, specifically, in a bid to alleviate their hardship and vulnerability.

1

Small-scale mining first entered the international development lexicon in the early 1970s, following publication of the United Nations' landmark report, *Small-Scale Mining in the Developing Countries* (UN, 1972). The document effectively put ASM 'on the map', describing activities and presenting a series of illustrative country case studies. However, it stopped short of articulating the sector's potential role in development.

In sub-Saharan Africa, today, ASM provides direct employment to tens of millions of people (Table 1), and creates jobs for many millions more in ancillary industries. Yet, its economic importance in the region continues to be overlooked in development planning and policymaking processes, possibly because the vast majority of the sector's operators work without permits or licences. But studies published over the past 10–15 years have consistently shown that this is largely a result of the costs and bureaucracy involved with securing them (ILO, 1999; Hentschel *et al*., 2002) and that despite this informality, ASM is at the heart of a complex livelihood diversification dynamic now firmly rooted across sub-Saharan Africa.

Table 1: Estimates of ASM employment in selected countries in sub-Saharan Africa

COUNTRY	DIRECTLY WORKING IN ASM	ESTIMATED NUMBER OF DEPENDANTS	MAIN MINERALS MINED ON A SMALL AND ARTISANAL SCALE
Angola	150,000	900,000	Diamonds
Burkina Faso	200,000	1,000,000	Gold
Central African Republic	400,000	2,400,000	Gold, diamonds
Chad	100,000	600,000	Gold
Côte d'Ivoire	100,000	600,000	Gold, diamonds
Democratic Republic of the Congo	200,000	1,200,000	Diamonds, gold, coltan
Eritrea	400,000	2,400,000	Gold
Ethiopia	500,000	3,000,000	Gold
Ghana	1,100,000	4,400,000	Gold, diamonds, sand
Guinea	300,000	1,500,000	Gold, diamonds
Liberia	100,000	600,000	Gold, diamonds
Madagascar	500,000	2,500,000	Coloured gemstones, gold
Malawi	40,000	–	Coloured gemstones, gold
Mali	400,000	2,400,000	Gold
Mozambique	100,000	1,200,000	Coloured gemstones, gold
Niger	450,000	2,700,000	Gold
Nigeria	500,000	2,500,000	Gold
South Africa	20,000	–	Gold
Sierra Leone	300,000	1,800,000	Gold, diamonds
South Sudan	200,000	1,200,000	Gold
Tanzania	1,500,000	9,000,000	Coloured gemstones, gold, diamonds
Uganda	150,000	900,000	Gold
Zimbabwe	500,000	3,000,000	Gold, diamonds, coloured gemstones

Sources: Data extracted from Dreschler (2001), Mutemeri and Petterson (2002), and UNECA (2011)

A poor understanding of ASM has sparked widespread condemnation of its activities. When confined to an informal 'space' and without the support and attention it deserves, ASM can be undertaken in hazardous conditions and cause considerable environmental damage. Confronting these challenges has often overshadowed the opportunities presented by livelihood diversification, specifically how ASM is interconnected with subsistence agriculture and the economic development this yields.

Today, hundreds of thousands of rural families generate disposable income from ASM, and use portions of these earnings to sustain their farm activities. The challenge now is convincing policymakers and donors that ASM is a rooted and indispensable dimension of the prevailing livelihood 'complex' in rural sub-Saharan Africa; and, that its linkages with agriculture have intensified in the face of challenges brought on by structural adjustment in the 1980s and 1990s. The sector's many nuances and perceived problems must be viewed with this symbiosis in mind. A critical 're-think' of ASM is urgently needed.

This *issue paper* examines the links and symbiosis between ASM and smallholder farming in rural sub-Saharan Africa, and explores how policy development in the 1970s and 1980s contributed to the former's peripheral position in international development thinking. It also reviews current and emerging policies relevant to ASM in sub-Saharan Africa, and recommends ways for the sector to become more integrated into development processes and activities in the region.

Farming and small-scale mining are strongly linked

Smallholder farmers have always diversified their incomes to guard against risk. Many have turned to ASM, often mining in the dry season and using the income earned to support their agriculturally based livelihoods.

2

A long history of livelihood diversification in rural sub-Saharan Africa

In sub-Saharan Africa, rural households have long engaged in multiple income-earning activities. Several studies paint a detailed picture of such patterns before 'structural adjustment', revealing how households diversified to minimise risks and/or to cope with economic shocks. Notable among these are Polly Hill's studies (1963, 1970) of Ghana's migrant cocoa farmers. The author's analysis captured the essence of the daily challenges facing farmers in 1950s and 1960s Ghana, detailed their skilful use of farm incomes to acquire new lands and build new houses, and highlighted how they diversified their income-earning sources by taking up activities such as lorry driving and various trades. Across the region, seasonality, especially the post-harvest dry season, has provided the impetus for this type of livelihood diversification (Bryceson, 2002).

Complementary research carried out on livelihood diversification in the 1960s and 1970s,[1] which drew heavily on data from national censuses and various regional and rural surveys, yielded similar conclusions: how non-farm activities provide primary employment in rural stretches of many developing countries. They also drew attention to how, increasingly, this diversification was important for the fate of smaller farms (Chuta and Liedholm, 1979). More recent conceptual and aggregate studies (eg, Haggblade, 1989 and Bryceson 1996) have also captured the delicate balance between agriculture and non-farm activities.

Certainly, in sub-Saharan Africa, smallholder agriculture – and, by extension rural families – suffered immensely during the period of protracted structural adjustment that gripped the region in the 1980s and 1990s. Sweeping changes, including the devaluation of local currencies, diminished prices for cash crops and the removal of subsidies on crucial farm inputs such as fertilisers, put a strain on smallholder production across the region. During this difficult period, the region's deeply rooted rural household diversification patterns became very visible. Today, households are doing the same: 'branching out' into the non-farm economy to avert risk, at times at an accelerated rate and often into ASM, because of its earning potential. The ASM sector is now a *rooted* and *integral* element of this farm–non-farm dynamic in many rural stretches in the region.

But despite this overwhelming evidence of rural diversification, much development policy continues to view rural African families as solely agricultural, and consequently promotes a 'small farm first' agenda. The question asked here, therefore, is: why have links with farming been virtually ignored when trying to understand ASM's rapid growth in sub-Saharan Africa? Mining is barely mentioned in most of the early landmark analyses on livelihood diversification, and in the few cases it is (e.g., Reardon, 1997), there is no clarification of what role it plays at the household level. The omission of ASM from seminal reviews (including Bryceson, 1996 and Ellis, 1998) is even more perplexing when many of the countries examined (including Tanzania, Ghana, Burkina Faso and Sierra Leone) are today the locations of the region's most dynamic ASM economies.[2]

Struggling farms

The rationale for championing a 'small farm first' agenda in sub-Saharan Africa has always been the contribution agriculture makes to GDP. For example, officials at the African Development Bank have lobbied for agricultural support in the likes of Uganda, Ethiopia, Kenya and Tanzania, where farming accounts for 47, 43, 30 and 34 per cent of national GDP respectively, and employs 75 per cent of the combined population of all four countries (Salami *et al*., 2010).

Contribution to GDP, however, was never intended to measure well-being because it fails to distinguish between costs and benefits, productive activities and destructive ones, or sustainable and unsustainable practices (Maro, 2007). Those who continue to use it to rationalise the implementation of a 'small farm first' agenda have ignored core elements of the entire story, particularly with smallholder agriculture becoming a less viable enterprise under structural adjustment. There are two reasons for this. The first is diminished farm size. Data collated by Hilson and Garforth (2012) show that smallholders find themselves struggling to produce enough crops for market because they work undersized plots. In West Africa, for example, three million of Mali's eight million rural inhabitants depend upon cotton harvested from plots of 2–3 ha (Dembélé and Staatz, 1999). In Ghana, even though 90 per cent of food is grown on smallholdings, there was a 70 per cent drop in land holdings above 2.4 ha between 1970 and 1984, and land under (smallholder) cultivation declined from 2,830,000 to 1,879,000 ha (Sarris and Shams, 1991).

[1] See Dunlop, 1971 for a compilation of this work.

[2] See, for example Hilson and Potter, 2005; Maconachie and Binns, 2007; Fisher, 2007; Luning, 2014

The situation appears to be no better in Eastern Africa. In Malawi, the average 'core farm' is less than 0.5 ha and about 65 per cent of the country's smallholders are poor (House and Zimalirana, 1992). In Tanzania, approximately 27 per cent of the country's 44 million ha of arable land is under cultivation; only 0.34 per cent of suitable land is being irrigated; and an estimated 70 per cent of the country's farmers rely on handheld implements and rainwater (IFAD, 2014). Overall, the average farm size in sub-Saharan Africa is less than 2 ha (Nagayets, 2005).

The second is support for agriculture which, under structural adjustment, has virtually disappeared in sub-Saharan Africa. In Ghana, subsidies for fertilisers were lowered from 65 to 45 per cent between 1980 and 1984 and phased out completely by 1990 (Khor, 2006). This, along with depreciation of the *cedi* (local currency), increased prices for agricultural inputs to unaffordable levels. Costs for insecticides and herbicides had tripled by the early 1990s, causing consumption to drop from 33,474 tonnes in 1975–1979 to 24,494 tonnes by 1990–1994 (Sarris and Shams, 1991). One of the more extreme cases, Malawi, began to institute World Bank/IMF-initiated reforms in the mid-1980s, phasing out all subsidies for fertilisers by the 1994/95 season. By 1987, fertiliser usage was down 43 per cent (Kachule and Chilongo, 2007). By 2003, average fertiliser consumption in sub-Saharan Africa was roughly 8 kg/ha (compared to 80 kg/ha in Latin America and 87 kg/ha in Southeast Asia).

In these settings data on GDP reveal very little about the viability of agriculture and farm dynamics. They most importantly fail to provide insight on the capacity in which, and the rationale behind why, individuals engage in agriculture. The more likely explanation is that, at a time when plot sizes are shrinking, and rural families are struggling to increase productivity and secure support, farming is being undertaken to satisfy the consumption demands of the household, with the non-farm stream – activities such as ASM – being simultaneously viewed, in light of agriculture's diminishing returns, as the main income-earning source (Banchirigah and Hilson, 2010).

The 'pull' of wealth and the 'push' of poverty

For decades, donors and policymakers have almost exclusively associated ASM with entrepreneurship, overlooking the sector's livelihoods dimension. The ASM sector tends to be associated with feverish 'rushes' that lead to the establishment of semi-permanent and permanent camps. These rushes are particularly common with coloured gemstones which, because of their sporadic geological occurrence, tend to spawn vertically integrated supply chains. Newly discovered deposits typically trigger a 'rush' led by people who possess the specialised knowledge required to extract, export and reach markets. But once the pandemonium ends, often people driven by hardship move in, lured by employment in what have become permanent or semi-permanent industries.

There is a growing body of evidence from sub-Saharan Africa which suggests that many people who have entered ASM over the past 10–15 years have done so because of hardship (Dreschler, 2001; Kamlongera, 2011; Hilson and Garforth, 2012; Hilson and Garforth, 2013). Some are educated and/or skilled but the vast majority are subsistence farmers (Hilson and Potter, 2005; Banchirigah, 2006; Kamlongera, 2011; Dondeyne and Ndunguru, 2014). Wels (1983), reflecting on experiences in a host of developing countries, reported over three decades ago that small-scale mining was providing valuable employment in depressed agricultural areas, and reduced the drift to towns. During the 1990s, in Geita, which continues to be one of Tanzania's richest gold mining districts, many villagers invested their profits from gold mining in agriculture (Chachage, 1995). In the early 2000s, proceeds from gold sales in Zimbabwe reportedly 'lubricated' communal and resettled farmers' agricultural activities, helping them purchase fertilisers (Maponga and Ngorima, 2003). In some areas of the country, alluvial gold panning has transformed 'into a full-time economic activity supporting the livelihoods of over half a million Zimbabweans both directly and indirectly' (Maponga and Meck, 2003). In other areas of Zimbabwe, people reportedly move into gold mining because of harsh economic conditions (Dreschler, 2001).

Synergies and seasonality

Many studies have captured the synergies between ASM and farming in sub-Saharan Africa. In Mozambique, proceeds from small-scale gold mining at Chazuka have enabled individuals to buy fertilisers and other crucial farm inputs (Dondeyne and Ndunguru, 2014). Inseparable linkages (flows of capital and labour) between agriculture and ASM can also be found in the Northern Region (Hilson *et al.*, 2013), Brong-Ahafo Region (Okoh and Hilson, 2011) and Eastern Region (Hilson and Garforth, 2013) of Ghana. In Liberia, many farm families grow rice to attract and feed labourers recruited specifically to mine for diamonds (Hilson and van Bockstael, 2011 and 2012). In Cameroon, where poor markets and impenetrable forest constrain agricultural development, ASM is largely seasonal but is increasingly important for incomes (Bakia, 2014; Schure *et al.* 2011).

Indeed, there is now a wealth of evidence that points to smallholder agriculture and ASM complementing one another over a calendar year. In rural Sierra Leone, artisanal diamond mining activities have long been interconnected with the seasonal farming economy (Binns, 1982). In the Niassa and Manica townships of Mozambique, an estimated 30 per cent of inhabitants engage in ASM to 'complement earnings from agriculture, which is mainly practised in the rainy season' (Mondlane and Shoko, 2003). In neighbouring Zimbabwe, gold panning used to be primarily a dry season activity, and its upsurge has been attributed to seasonal droughts (Maponga and Meck, 2003). Research in Mali (Komana West) and Ghana (East Akim) confirms that farm families 'branch out' into ASM in the dry season, especially in the former, a distinctively Sahelian country, where less than two per cent of land is cultivatable and dry seasons are protracted (Hilson and Garforth, 2012).

Intermeshed, not alternative

Each of these situations underscores how ASM's role has changed in 'adjusted' settings: specifically how it has progressively taken on an income-earning role, replacing the function traditionally played by farming, which is increasingly being viewed as more of a source of food for the household, rather than for markets. Despite their hardships, many of the region's rural inhabitants who are now dependent on ASM as their main source of income still see themselves as 'farmers first' (Kamlongera, 2011). This mostly fits the mould of 'distress-push' diversification. The failure of African governments, donors and – to some extent – NGOs to fully embrace these realities in policy is alarming, particularly given the role structural adjustment reforms have played in driving this process.

Given the evidence, ASM and agriculture should be viewed and treated in policy-making circles as inseparable activities (Cartier and Burge, 2011), rather than as alternatives to each other. This would better position donors and governments to address the sector's nuances. For example, the challenge of child labour attributed solely to ASM is sometimes a product of household diversification: young girls and boys move seasonally with parents between family farms and mining, and carry out similar tasks in both settings. An appreciation of these dynamics would undoubtedly yield more comprehensive policy interventions. Moreover, responding to these links proactively in policy would expose the limitations of the *alternative livelihoods* agenda that is often championed. Specifically, an improved understanding of the interconnections between the two activities will illustrate how a 'redeployment' of informal miners in agriculture does not work if they are already farmers pushed into mining by poverty.

Fortified linkages between ASM and agriculture have proved to be a platform for wealth creation. Specifically, scores of rural households in sub-Saharan Africa crippled by structural adjustment, which increasingly rely upon farming for subsistence and less so for income, are making the best out of their arduous work in ASM, using their new-found positions to improve their quality of life. In Burkina Faso, for example, some female miners have invested in plots of land – often in their home towns – on which they build houses they rent out (Werthmann, 2009). In Mozambique, gold mining has put people in a position to build better houses and buy cattle, and, in some cases, cars and with that, entry into the transportation sector (Dondeyne and Ndunguru, 2014). In Zimbabwe, small-scale gold mining has spawned more shops and hotels, delivering wealth throughout the supply chain (Mawowa, 2013). And in Ghana, where capital and labour routinely flow between agriculture and ASM, mining money has similarly put people in a position to build houses, send their children to schools, and to pursue other business ventures (Hilson and Garforth, 2013).

ASM policies

The ASM sector has been left ‘out in the cold’ by development practitioners who have promoted support for farming as the solution to rural poverty in sub-Saharan Africa, and championed large-scale resource extraction as the vehicle for facilitating economic development in the region. Is a ‘re-think’, which is undoubtedly necessary, underway?

3

Early thinking

'Small-scale mining' first entered the international development lexicon in the early 1970s, following publication of the United Nations' landmark report, *Small-Scale Mining in the Developing Countries* (UN, 1972). The document effectively put ASM 'on the map' but fell short of articulating its potential role in development. Donors later organised several international meetings, including the International Conference on the Future of Small-Scale Mining, in Jurica (Mexico) in 1978, and Strategies for Small-Scale Mining and Mineral Industries, in Mombasa (Kenya) in 1980 but these did little more than stimulate discussions on how to define the term.

This was a missed opportunity, particularly for sub-Saharan Africa, which would soon embrace major policy changes under the auspices of 'structural adjustment' during the 1980s and 1990s. Given how important, economically, ASM is today and how extractive industries have become a focal point of development policy in sub-Saharan Africa, it now seems inexplicable that the sector failed to feature anywhere in the region's inaugural structural adjustment programmes.

Competing with smallholding

Considerable foresight would have been needed, however, to facilitate such an inclusion. It would have required grafting ASM on to 'Green Revolution' thinking, which pushed to increase agricultural production and helped to spawn the 'small-farm first' rural development paradigm in the first place.

In the mid-1970s, donors began to pledge commitments to addressing the 'basic needs' of the poorest people in developing countries. But despite calls for 'integrated rural development', the thinking did not extend beyond agriculture. The World Bank and other donors pushed heavily for smallholder farming to be the centrepiece of delivering basic needs for the rural poor. Even though economies and agricultural commodity prices have since changed markedly, the idea that intensified support for smallholders is a cure for rural poverty remains firmly on the donor agenda and has stifled exploration of other ideas, especially livelihood diversification.

At the time, extractive industries had not yet made a mark on the development agenda. World Bank documents published at the time suggest that lenders were brainstorming ways for extractive industries to support development, but it was a bias towards large-scale export-led growth that was in the works. The ASM sector would remain 'homeless' in development thinking.

Just a subset of large-scale mining?

With few exceptions, this continues to be the case today. In the 1980s and 1990s, a host of organisations in the donor and NGO communities began implementing projects for ASM. But most were disconnected from central development policy and have since wound down due to a lack of continued government support or supervision. An influential review by Notestaller (1987) produced on behalf of the World Bank cemented the prevailing opinion that ASM was an entrepreneurial activity for enterprising businessmen. It barely acknowledged the sector's livelihood dimension. This review also reinforced calls for ASM to be treated as a subset of large-scale mining, leading World Bank officials to call for both branches of the mining sector to be viewed equally in policy in its landmark report, *A Strategy for African Mining* (World Bank, 1992).

This emphasis in part explains why so many ASM projects failed to achieve lasting improvements, and why today, most of the sector's activities are informal: it has spawned codes and regulations that have stifled, not facilitated, the sector's legalisation and formalisation.

Stifling formality

Government officials frequently argue that ASM's informality is largely due to individuals deliberately avoiding securing a licence. But recent findings tell a completely different story.

By the mid-1990s, most countries in sub-Saharan Africa were planning to implement or had in place policy frameworks and legislation and institutions with the aim of formalising ASM (Fisher, 2007). But most of these systems are unwieldy, costly and bureaucratic – hardly appropriate for poverty-driven people. In Ghana, for example, until recently, prospective licensees had to pay upward of US$512 to prepare a site plan; US$51 for the application form; a US$128 processing fee; a US$282 'consideration' fee; US$384 to the Environmental Protection Agency for an environmental impact assessment; and a number of other fees, including a stamp duty, court duties, and stool land registration (Hilson *et al*., 2014). In Liberia, diamond miners unable to cover the US$150 fee for a Class C mining licence (which only Liberian nationals can obtain) find themselves forging parasitic relationships with local government officials, who 'allow' them to mine in exchange for small 'backdoor' payments. Many cannot use the heavy machinery they possess (a key to increasing their yields and improving their livelihoods) because doing so requires securing a Class B licence, costing US$5000.

There is also a failure to ensure a level playing field for ASM and foreign large-scale miners when it comes to accessing land. Too often, regulatory requirements favour large-scale and junior mining companies or well-connected speculators who possess the knowledge needed to negotiate the system. A wealth of evidence points to a large share of land being under concession to large-scale mining and mineral exploration companies. In Ghana, as much as 40 per cent of gold-mineralised land could be in the hands of close to 400 foreign mining and mineral exploration companies (Hilson, 2011). In Tanzania, companies are granted areas as large as 150 km^2 for reconnaissance and prospecting (Lange, 2006).

Across sub-Saharan Africa, efforts to demarcate areas to prospective ASM licensees have been pedestrian at best. As opposed to proactively prospecting and 'blocking out' lands suitable for ASM, however, host governments have generally waited for mineral exploration and mining companies to release sections of their concessions before engaging in any demarcation exercise.

Late and faltering recognition

By the early 1990s, some perspectives on ASM seemed to be changing. The first sign of a re-think occurred at an international seminar in Harare in February 1993, *Guidelines for Development of Small- and Medium-Scale Mining* (Labonne, 1994), a primer for the landmark World Bank-organised International Roundtable on Artisanal Mining in 1995 (Barry, 1996). Here, new views were aired about ASM for the first time, including the idea that it is largely a poverty-driven activity.

Around the same time, donor thinking seemed to be taking on a 'livelihoods' dimension. Heading the charge was the UK Department for International Development (DFID), which began to popularise the concept with considerable enthusiasm, eventually unveiling its Sustainable Livelihoods Framework (Norton and Foster, 2001). The United Nations Department for Economic and Social Affairs (UNDESA) had laid a foundation for ASM livelihoods research in sub-Saharan Africa through a series of studies in Ethiopia, Ghana, Guinea and Mali (Labonne *et al.*, 2000). These efforts sought to identify policy options and best practices capable of promoting alternative and complementary sustainable livelihoods for artisanal miners, and/or making the sector economically viable. The main output was a workshop in Yaoundé, Cameroon that produced the 'Yaoundé Vision Statement', a call to help to 'sustainably reduce poverty and improve livelihood[s] in African ASM communities by 2015, in line with the Millennium Development Goals' (UN, 2003).

These efforts, however, proved to be short-lived standalone initiatives. The ASM sector would remain peripheral to mainstream development policymaking. The rapid death of Communities and Small-Scale Mining (CASM), launched in 2001 by the World Bank as a platform to address ASM concerns, was in part a result of its isolation and its inability to cultivate relationships with other areas of development. Overall, DFID's focus on livelihoods similarly proved short-lived, at least in sub-Saharan Africa.

Current local and regional policies

As a result of this legacy, local and regional policy in sub-Saharan Africa is not yet in any position to treat and support ASM as a primary rural income-earning activity. The region's Poverty Reduction Strategy Papers, which are required by the IMF and World Bank before a loan is awarded to a government, and are supposed to be the 'eyes and ears' on the ground that offer insightful ways in which to empower the poor, show a distinct lack of coverage on ASM.

A further problem is that there are different 'generations' of PRSPs, each expounding different ideas and calling for different strategies, so that even where ASM is mentioned, attention later disappears. Ghana's first PRSP, *An Agenda for Growth and Prosperity*, notes that 'Current mining laws tend to disproportionately favour large-scale mining enterprises' and that 'measures will be put in place to expand the scope and increase the support to the small and medium scale sub-sector with the view to making it the predominant means of exploiting minerals in the long term' (IMF, 2003). Similarly, Tanzania's second PRSP, *National Strategy for Growth and Reduction of Poverty*, stresses the 'need to balance the livelihood requirement of artisanal miners with the economic objectives of the large-scale operators' (IMF, 2005). But the next generation of these countries' PRSPs fail to mention ASM at all and call for mining to be transformed into an export-led industry. The more recent wave of reformers, including Rwanda (IMF, 2013a) and Senegal (IMF, 2013b), similarly fail to mention ASM, similarly calling for mining to be viewed and promoted as an export-driven industry.

Region-wide initiatives have also failed to recognise ASM's potential. The New Economic Partnership for African Development (NEPAD), an economic development programme of the African Union launched in 2001, has six 'Priority Areas', the first of which is 'Agriculture and Food Security' (NEPAD, 2015). The ASM sector is not mentioned in any of its documents; nor is there any acknowledgement of how, in many areas of sub-Saharan Africa, rural farm families engage in multiple livelihoods, including ASM, as a survival strategy.

Even specific mining policy interventions have failed to reboot the agenda. This includes the Africa Mining Vision (African Union, 2009), a blueprint for more sustainable mining-led development that was adopted by the First African Union Conference of African Ministers Responsible for Mineral Resources Development (Addis Ababa, October 2008), which seeks to boost the continent's revenue from mining. The Vision does identify ASM as a priority but the document's main focus is transparency in and revenue flows from the large-scale sector. It fails to clarify how discussions on taxation, royalties and dividends apply to informal ASM. The Vision does little to legitimise ASM's existence and its talk about formalisation is quite prescriptive, although there are signs that this may be changing.

'Demand-side' support

Specific moves to support ASM through supply chain/consumer-driven initiatives, most notably under the banner of fair trade, appear to make efforts to empower marginalised operators, but the jury is still out on their impact. From the sizable body of scholarship that has emerged in recent years on the subject (Sippl and Selin, 2012; Childs 2008, 2014a, 2014b; Hilson, 2008, 2014), these schemes are not yet empowering the poorest of the poor. Most of the initiatives undertaken have targeted the 'low hanging fruit': connecting with more 'certifiable' affluent operators as opposed to working with impoverished, needy miners, as well as working in settings which are not the most challenging, such as Kenya and Burkina Faso. There is also evidence that, in the absence of any generally agreed-upon universal criteria for fair trade mining, organisations are undertaking exercises which, despite implying that they are grassroots in their orientation, are not targeting ASM operators at all, but are rather implementing interventions that are more reminiscent of corporate social responsibility programmes.

New donor attitudes

More positively, donors seem to be finally warming to ASM, with the World Bank now taking a lead role in developing a more nuanced understanding of the sector, particularly in sub-Saharan Africa. Its recent projects in Malawi and Tanzania seem to be featuring ASM more centrally. Both donors and industry bodies seem to recognise that a bureaucratic and costly licensing system has prevented formalisation of ASM. Similarly, DFID seems to be regaining interest in ASM's livelihood aspects, after a decade-long hiatus, and is poised to carry out ASM-related work in Kenya, the Democratic Republic of Congo and Sierra Leone. A recharged DFID would be an excellent addition to a donor landscape now featuring the likes of similarly revitalised GIZ, SWISSAID and AusAID.

There is still a long way to go but with additional small changes, ASM could be formalised and realise its full potential in sub-Saharan Africa. A more supported formalised ASM sector would go a long way towards ensuring the viability of the region's smallholder farming: throughout sub-Saharan Africa, there are strong linkages between these two activities, the preservation of which is crucial to the survival of the region's rural families. The next and concluding section of the report makes recommendations for achieving this.

Looking Forward

In sub-Saharan Africa, policy has no doubt perpetuated ASM's environmental, social and economic ills: a response to stifling regulatory frameworks. But even in its unlicensed state, the revenues it generates helps to propel agriculture, with which it has inseparable linkages.

Given the deteriorating economic state of sub-Saharan Africa, and the ever-widening gap between its rich and poor, ASM can be a 'blessing', providing jobs and supporting the livelihoods of millions. It is, without question, an unrivalled employment engine. This fact makes moves to eliminate it misguided.

In sub-Saharan Africa, and possibly elsewhere in the developing world, ASM needs to be viewed more as a livelihood and less as an enterprising activity. The following recommendations would lead to a strengthened ASM platform. If adopted, these recommendations would improve the viability of the subsistence agricultural activities in which hundreds of thousands of people across sub-Saharan Africa who are engaged in ASM simultaneously undertake.

Ministerial collaboration. A necessary first step is bringing to the table all ministries responsible for rural development. ASM is not just a *mining* issue; it is a *rural development* issue. It is crucial, therefore, to engage not just mining ministries but also those government bodies dealing with agriculture, rural development, local government, taxation and youth employment.

Simplify the licensing procedure for ASM. Evidence from across sub-Saharan Africa points to miners being frustrated with the licensing process. Schemes must be simplified, adequately decentralised, and unnecessary costs must be eliminated. Tanzania, for example, has empowered its local Ministry of Minerals and Energy offices to make decisions on applications. Such approaches could facilitate the formalisation of ASM region-wide. A more stable ASM platform is key to improving faltering subsistence agriculture.

Demarcate adequate mineralised lands for *licensed* small-scale miners. Different countries in the region are in varying phases of mining sector reform, so the appropriate strategies for making land available will vary. In the more 'mature' reformers, such as Ghana and Tanzania, governments must pressure mining companies to release areas of their concessions that they are not intending to use but which may be appropriate for ASM. In 'new' reformers such as Malawi, land can still be allocated *before* the wave of large-scale mineral exploration and mining occurs. In both cases, involving national geological surveys, and potentially foreign partnering surveys, will be crucial.

Coordinate donor activity. Donors must adopt a more comprehensive outlook on rural development, incorporating ASM to the best of their abilities. A starting point could be collaboration between donors (and their partners) who are looking separately at farming and ASM, with the aim of formulating a more integrated rural development policy. For example, the World Bank could involve IFAD on an ASM livelihoods project, tasking it with determining agricultural potential in a given region. There is also the need to realign the activities of the bilaterals, which appear to have the energy and drive to undertake ASM work but which have limited funds and generally carry out more specific and focused tasks, such as livelihood comprehensive analyses and ministerial engagement.

Empower local ASM associations. There is a need for associations to take the lead and provide direction for the ASM sector. Such associations exist but they are badly resourced, poorly staffed and limited in their reach. Often, NGOs are relied upon to partner with ASM operators but most, including those based locally, have limited knowledge of the sector. Donors should involve ASM associations from the outset, as their officials are most familiar with the industry.

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In sub-Saharan Africa, artisanal and small-scale mining (ASM) employs tens of millions of people directly. Most of the region's ASM activities are informal because registration is often costly and bureaucratic. The resulting illegality, along with the sector's numerous social ills and environmental impacts, has overshadowed its importance, in particular how many subsistence farmers now rely on ASM for their disposable incomes. This paper explores the links and symbiosis between ASM and subsistence farming in sub-Saharan Africa, and suggests ways in which to harness more effectively the former's 'livelihoods' dimension in policy.

IIED is a policy and action research organisation. We promote sustainable development to improve livelihoods and the environments on which these livelihoods are built. We specialise in linking local priorities to global challenges. IIED is based in London and works in Africa, Asia, Latin America, the Middle East and the Pacific, with some of the world's most vulnerable people. We work with them to strengthen their voice in decision-making arenas that affect them – from village councils to international conventions.

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This research was funded by UK aid from the UK Government, however the views expressed do not necessarily reflect the views of the UK Government.

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